

Digitally Enhanced advanced services for domestic AppLiances (DEAL)

DEAL scoping project Executive Summary

Introduction

After sales service provision for domestic appliances is well established. Unlike other sectors, there is no provision of advanced services here, i.e. delivery a capability instead of a product to the customers, and digital technologies are not fully explored to provide support to deliver these capability-oriented services. Businesses need guidance to evaluate and support such digital service transformation. Without it, value opportunities for customers and service providers will be missed.

The DEAL project explored the state-of-practice of digitally-enhanced advanced services for domestic appliances in the UK. An understanding of current practice and potential

benefits and barriers for implementation for practitioners was gained through engagement and collaboration with 22 participants from 12 private organisations and 15 researchers from 7 Universities and R&D centres .. The knowledge on current practice was then contrasted with the state-of-art from academic literature to identify key implementation gaps. This has uncovered the emerging digital innovations that can enable outcome-based propositions for domestic appliances, e.g. pay-per-use or pay-per-outcome models, including insights on data analysis needed to enhance the decision-making processes supporting the development of service-oriented and innovative business models.

Project Objectives

- To identify digital technologies/innovations relevant for advanced services in domestic appliances, including needs for data collection and analysis.
- To define what are the emerging digitally enhanced advanced services for domestic appliances in the short, medium and long term.
- To identify the potential capability-based value propositions for customers, and to analyse value creation for different stakeholders involved in the service network.
- To define the key challenges and barriers to value creation for key stakeholders, and to the implementation of digital innovations.

Key Findings

Six digital technologies and innovations are required for advanced services in domestic appliances.



SENSOR TECHNOLOGY AND CONNECTIVITY

Sensors are essential to understand the appliance usage patterns and to gather, store or transfer data.



SOFTWARE APPLICATIONS AND PLATFORMS

These are helpful to provide ubiquitous information and control to customers, for example with mobile apps.



REMOTE MONITORING TECHNOLOGY

It support the optimisation of the appliance performance and conducting remote service actions.



DATA STORAGE

Data recorded directly on the appliances can facilitate the service actions on site.



DATA ANALYTICS

This can support the provision of advice to customers for achieving better performance and use of the appliance.

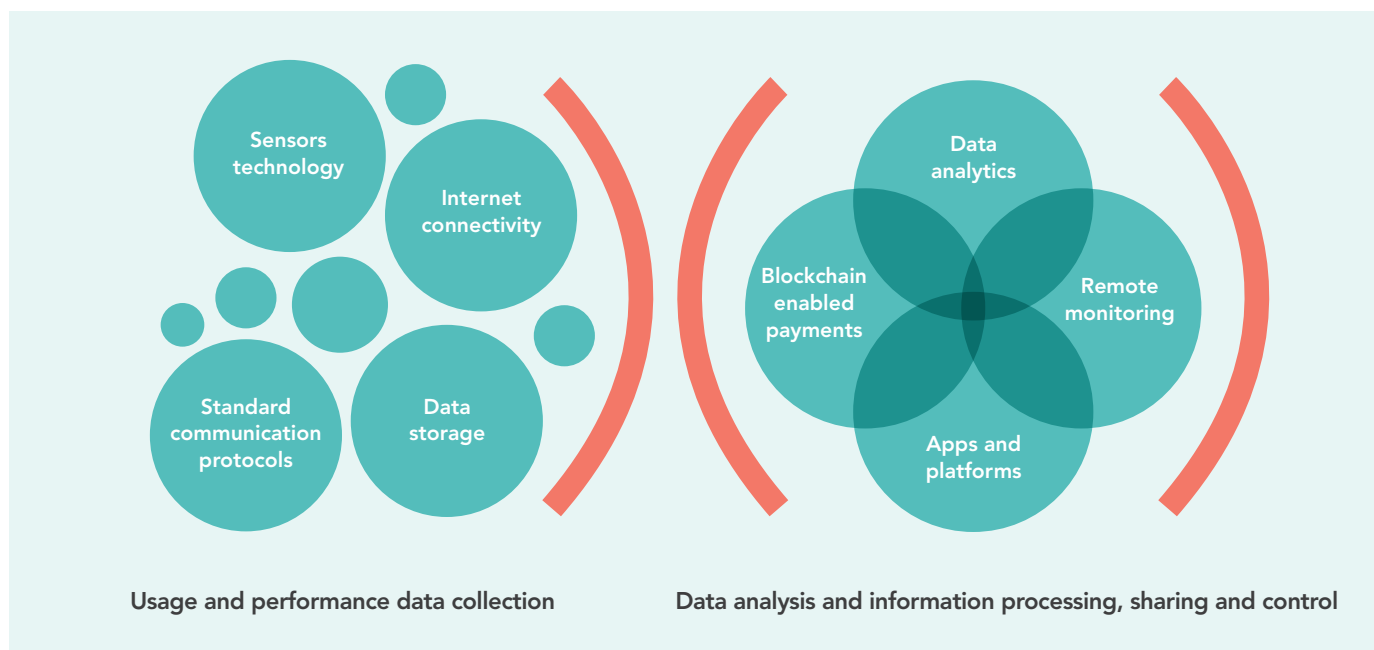


BLOCKCHAIN TECHNOLOGY

It can be helpful to manage small and frequent payments, e.g. in pay-per-use schemes.

Most promising technologies are: sensor, remote monitoring, data analytics and connectivity technologies. They help collecting and processing appliance usage and performance related information. Moreover, software applications and platforms, and blockchain technology can support information sharing and control, and payment processing,

respectively. Stakeholder concerns were related to the need to establish standard communication protocols to facilitate the management of multi-device environments, and the need to have stable access to connectivity in households as appliances may only be functional upon internet connectivity.

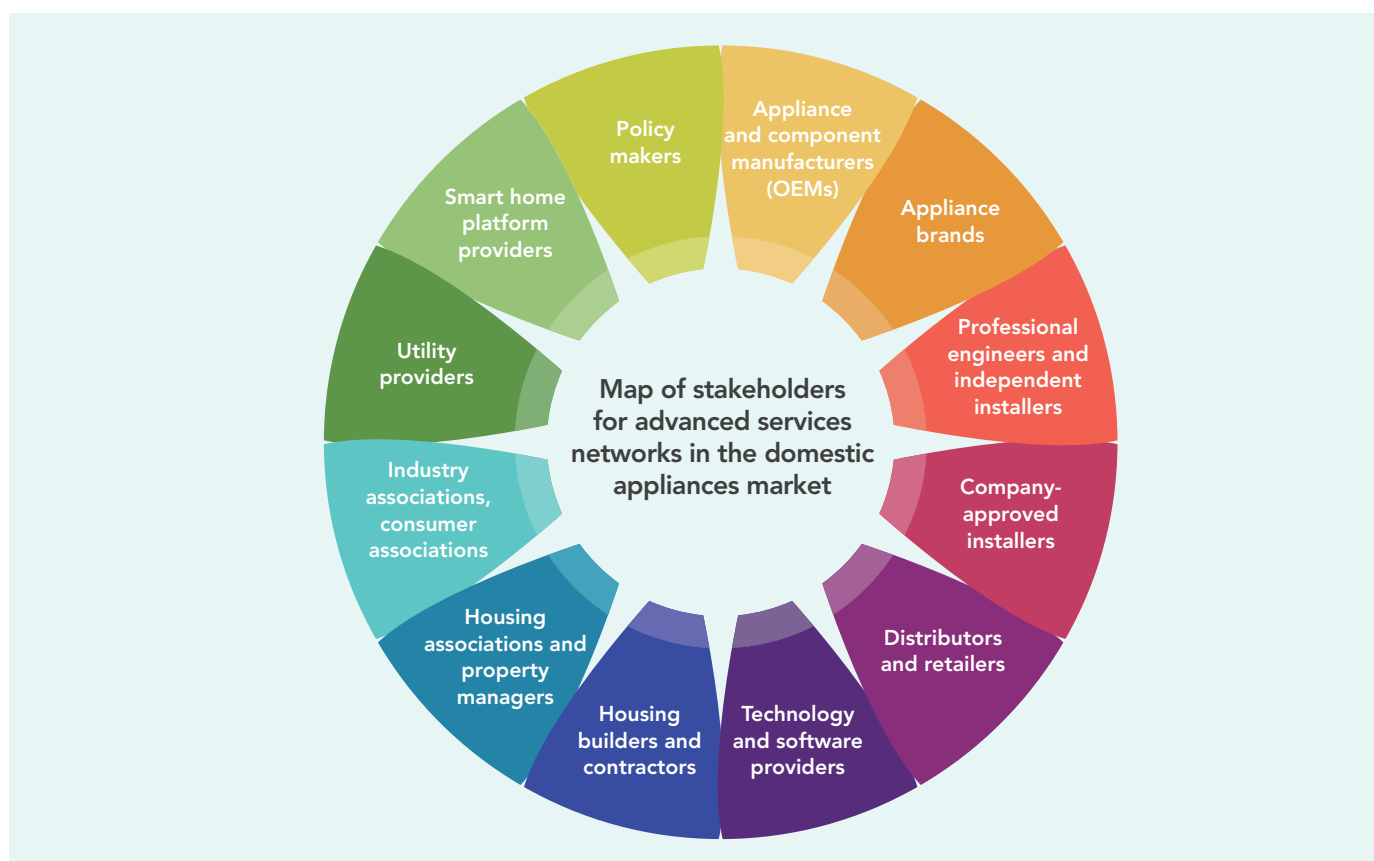


Our findings indicate data requirements for advanced service providers regarding:

(1) appliance performance and any deviations from targets indicated in labels or service agreements;

(2) customer use of appliance and any deviations from recommended operating conditions or intended use;

(3) customer preferences, wants and needs.



Value creation for customers and other stakeholders in the service network

Based on our findings, rental and pay-per-use models were considered higher value-adding propositions towards which the domestic appliances market would be moving in the near future. Small pilots and trials are being run in some instances to understand in which customer contexts these models could add more value to both customers and service providers.

Customer value propositions revolved around three key themes:

- 1) offering a good cost-benefit balance to the customers
 - making sure they have the information to understand how much they are saving;

- 2) guaranteeing the right performance based on customer needs
 - i.e. ensuring customers that they have the best technology operating at the best capacity for their individual needs;
- 3) providing the simplicity of a single contract with long-term flexibility based on changing customer needs
 - e.g. smaller versus larger appliances.

The value propositions for other stakeholders in the supply network were more dependent on the specific role of the organisation within the service network and will require further in-depth study to identify relations and value exchanges in each specific advanced service scheme.

Main challenges for value creation through digitally-enhanced advanced services in domestic appliances

INDUSTRY GENERAL

(observed in other industries when transforming to advanced services delivery)

1. development of a financially viable advanced service business model,
2. impact on current business model and cash flow,
3. balancing the cost of embedding the technology and setting up the platform / system,
4. balancing the service oriented mind-set with the current product orientation,
5. balancing the potential to provide a wide range of functionality with simplicity and easiness to use for customers,
6. communicating the value for money of these advanced services to customers

DOMESTIC APPLIANCES SPECIFIC

(due to current industry structure and to cost and complexity of integrating novel technologies)

7. access to the broad range of skills and resources, e.g. adequately trained and multi-skilled technicians / engineers, software development and management, needed to set up the system
8. resistance from external actors such as installers and technicians which may have the direct relationship with the customer and will seek to protect it,
9. need for competitors to work together for synchronisation between appliances and smoothly delivery of a one-stop solution to customers,
10. dealing with technical and non-technical (e.g. consumer misuse) issues potentially affecting appliance durability and longevity

Further steps and information

We conclude that businesses:

- Should align technical capabilities with value creation mechanisms in advanced services business models.
- Should develop a business model transformation roadmap to exploit digital capabilities in servitisation.

The DEAL project uncovered the above 10 challenges for further research work and the need for higher understanding

of value creation mechanisms among organisations belonging to the advanced service ecosystem and service delivery networks. We are planning to investigate these areas through a multi-stakeholder project and conducting in-depth use cases with collaborators.

If you are interested in knowing more about our work or in getting involved, please contact Dr Maria Holgado, University of Sussex Business School, m.holgado@sussex.ac.uk

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